UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	**Applicant(s)**	
Office Action Summary	10/771,993	KATZ ET AL.	
	Examiner	**Art Unit**	
	KELLIE CAMPBELL	3691	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>28 January 2010</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5) ☒ Claim(s) <u>1,2,4-13 and 17-25</u> is/are pending in the application.

    5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) <u>1,2,4-13 and 17-25</u> is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. The following is a final Office Action on the merits in response to the request for continued

    examination filed on January 28, 2010. No claims are amended. No claims are cancelled..

    Therefore, Claims 1-2, 4-13, and 17-25 are pending and examined.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37

    CFR 1.17(e), was filed in this application after final rejection. Since this application is

    eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR

    1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn

    pursuant to 37 CFR 1.114. Applicant's submission filed on January 28, 2010 has been

    entered.

Response to Arguments

3. Applicant argues that at pages 43-44 of the specification, Applicants describe an

    embodiment of the invention where the "complex order process 50 prioritizes, sorts, and

    ranks the inverse complex orders to determine the best inverse complex order." The

    complex order process "multiplies the net price of the first inverse complex order by-1 to

    create the calculated net price." It is this calculated net price that is then used to determine if

    the inverse complex order can trade. Specification at 44-45. Applicants submit that at the

    very least, this portion of the specification demonstrates that the Applicants had possession

    of an "inverting routine" and an "inverted price" within the scope of the invention. Thus,

    these features recited in independent claims 1, 24, and 25 are patentable under 35 U.S.C. §

112, second paragraph, as are claims 2, 4- 13, and 17-23 that depend from claim 1. The

rejections set forth in paragraphs 7 and 8 should be withdrawn.

Applicant's arguments have been fully considered and are persuasive. The rejection has

been withdrawn.

4. Applicant argues that Wagner does not show or suggest an algorithm for matching straddles

or other complex orders.

Examiner respectfully disagrees. Wagner expressly discloses an algorithm for matching

complex orders (Column 13, Lines 39-47, The conditional orders are either "fill or kill" or "limit

up," "limit down," "time order," "at market" , "stops," and "spreads/straddles."). Therefore, the

limitation is met.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6. **Claims 2, 4-13, and 17-25 are rejected under 35 U.S.C. 112, second paragraph, as**
   being indefinite for failing to particularly point out and distinctly claim the subject
   matter which applicant regards as the invention.

7. **As per Claim 1,** it recites "if such an inverse order is found". This recitation is vague and

indefinite because it does not require the preceding steps to occur because of the recitation

"if". Language that suggests or makes optional but does not require steps to be performed

or does not limit a claim to a particular structure does not limit the scope of a claim or claim

limitation. Applicant should positively recite any required steps to be performed.

8. **As per Claims 1, 24, and 25,** they recites "an inverting routing that inverts the net price of

each of the inverse complex order" or "an inverted net price". This recitation is vague and

indefinite because it is unclear how a "net price is inverted". Does Applicant mean by

inverted net price merely the net price of the inverse order? Does Applicant mean 1 divided

by the net price? Clarification is required. For purposes of examination, Examiner will

interpret the recitations to cover the net price of the inverse complex orders.

9. **As per Claims 2, 4-13, and 18-23**, they are rejected 35 U.S.C. 112, second paragraph at

least for their dependence on Claim 1 which is rejected 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 1-2, 4, 6-8, 10-12, 14-15, 17-18, and 20-21 are rejected under 35 U.S.C. 102(b) as**

being anticipated by U.S Patent 4,903, 201 to Wagner (hereinafter Wagner).

12. **As per Claim 1,** Wagner discloses a system for executing a financial transaction to

purchase or sell a plurality of financial instruments (Column 1, Lines 5-13, The present

invention relates to a futures trading exchange and in particular to an automated open

outcry futures trading exchange having a central processor associated with one or more

remote terminals through which trades can be made by members of the exchange who

enter offers or bids at the remote terminal and couple them to a central processor which

compares any bid with offers on a priority basis, finds a match and completes the execution

of the transaction.; Column 4, Lines 10-13, The exchange central computer will be able to

handle a full array of futures orders including straddles, limit orders and stop orders), the

system comprising:

a memory adapted to store a plurality of orders or quotations to purchase or sell the financial instruments (Column 7, Lines 3-8, Thus, if remote terminal 18 is a "smart" terminal, it may include a microprocessor 22 which would include a keyboard and a display for text editing which is associated with a memory or storage unit 24 through connection 26, a printer 28 through connection 30 and an output on connection 34 to modem 32.; Column 3, Lines 43-47, The exchange central computer will retain all orders received, arranging each bid and offer on the basis of its price, quantity and entry time and displaying all bids in descending order of price and all offers in ascending order of price.; Column 6, Lines 13-18, FIG. 6 is a diagrammatic representation of the memory storage circuits of the host or central computer in the trading system for storing the bids or offers by time, price and quantity),

the orders or quotations including at least one complex order and a plurality of inverse complex orders, the complex order and inverse complex orders each having a net price (Column 3, Lines 43-47, The exchange central computer will retain all orders received, arranging each bid and offer on the basis of its price, quantity and entry time and displaying all bids in descending order of price and all offers in ascending order of price.; Column 3, Lines 53-58, In addition, the video monitor of each remote terminal will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the spread relationships or price differential among the various contract months, and allows simultaneous spread trades (both in time and by commodity) to take place; Column 4, Lines 10-13, The exchange central computer will be able to handle a full array of futures orders including straddles, limit orders, and stop orders).

and each including a plurality of legs, each leg being an order to purchase or sell at least one of the financial instruments (Column 4, Lines 10-13, The exchange central computer will be able to handle a full array of futures orders including straddles, limit orders and stop orders.;

Column 13, Lines 39-47, The conditional orders are either "fill or kill" or "limit up," "limit down,"

"time order," "at market" , "stops," and "spreads/straddles." Other types could be established if

needed or desired.; Column 3, Lines 53-58, In addition, the video monitor of each remote

terminal will display lot sizes, last sale prices, daily price ranges, the volume for each contract

month, the spread relationships or price differential among the various contract months, and

allows simultaneous spread trades (both in time and by commodity) to take place);

     a processor coupled with the memory (see Figure 6; Column 7, Lines 3-8, Thus, if

remote terminal 18 is a "smart" terminal, it may include a microprocessor 22 which would

include a keyboard and a display for text editing which is associated with a memory or storage

unit 24 through connection 26, a printer 28 through connection 30 and an output on connection

34 to modem 32.; Column 6, Lines 13-18, FIG. 6 is a diagrammatic representation of the

memory storage circuits of the host or central computer in the trading system for storing the bids

or offers by time, price and quantity); and

     a matching algorithm coupled with the processor, wherein the processor uses the

matching algorithm to match each leg of the at least one complex order with other orders or

quotations stored in the memory (Column 12, Lines 16-19, As the order is time stamped and

filed in the history file of the memory 220; Column 12, Lines 8-15, If identifier unit 194

determines that the incoming signals constitute a new order, it produces an output on

connection 210 to the order process circuitry 212 in the central processor unit for processing.

The output of circuitry 212 on line 214 is coupled to a time stamp unit 216 and sent through

connection 218 to the memory history file 220. Thus, a file history of all orders is kept in

memory 220.; Column 1, Lines 5-13, The present invention relates to a futures trading

exchange and in particular to an automated open outcry futures trading exchange having a

central processor associated with one or more remote terminals through which trades can be

made by members of the exchange who enter offers or bids at the remote terminal and couple

them to a central processor which compares any bid with offers on a priority basis, finds a

match and completes the execution of the transaction.; Column 3, Lines 53-58, In addition, the

video monitor of each remote terminal will display lot sizes, last sale prices, daily price ranges,

the volume for each contract month, the spread relationships or price differential among the

various contract months, and allows simultaneous spread trades (both in time and by

commodity) to take place.) and wherein the matching algorithm includes:

   a synthetic pricing routine that calculates a synthetic high price and a synthetic low price

for the at least one complex order (see Figure 1 and related, Figure 6 and related text; see

Figure 9 and related text)

   an inverting routine that sorts the inverse complex order, determines an inverse complex

order with the lowest inverted net price that is less than or equal to the synthetic high price and

greater than or equal to the synthetic low price, and matches the at least one complex order

with the determined inversed complex order if such an inverse complex order is found (see

Figure 1 and related, Figure 6 and related text; see Figure 19 and related text; Column 1, Lines

5-13, The present invention relates to a futures trading exchange and in particular to an

automated open outcry futures trading exchange having a central processor associated with

one or more remote terminals through which trades can be made by members of the exchange

who enter offers or bids at the remote terminal and couple them to a central processor which

compares any bid with offers on a priority basis, finds a match and completes the execution of

the transaction.; Column 3, Lines 53-58, In addition, the video monitor of each remote terminal

will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the

spread relationships or price differential among the various contract months, and allows

simultaneous spread trades (both in time and by commodity) to take place.)).

(Note: Examiner interprets "simultaneous spread trades" to mean matching all legs of the spread as a spread requires one long leg and one short leg on two different instruments).

13. **As per Claim 2,** Wagner discloses the system of claim 1, wherein matching each leg of the at least one complex order is contingent on matching all of the legs of the complex order (Column 3, Lines 53-58, In addition, the video monitor of each remote terminal will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the spread relationships or price differential among the various contract months, and allows simultaneous spread trades (both in time and by commodity) to take place.). Note: Examiner interprets "simultaneous spread trades" to mean matching all legs of the spread as a spread requires one long leg and one short leg on two different instruments.

14. **As per Claim 4,** Wagner discloses the system of claim 1, wherein the plurality of financial instruments includes at least one options contract (Column 4, Lines 11-13, The exchange central computer will be able to handle a full array of futures orders including straddles, limit orders and stop orders.). Examiner notes that straddles involve buying an equal amount of call options and put options with the same strike price.

15. **As per Claim 6,** Wagner discloses the system of claim 1, wherein the plurality of financial instruments includes at least one futures contract (Column 1, Lines 5-13, The present invention relates to a futures trading exchange and in particular to an automated open outcry futures trading exchange having a central processor associated with one or more remote terminals through which trades can be made by members of the exchange who enter offers or bids at the remote terminal and couple them to a central processor which compares any bid with offers on a priority basis, finds a match and completes the execution of the transaction.; Column , Lines , The present invention, the automated futures trade exchange, has created an entire automated process for trading futures contracts which

provides accurate and precise information, trading based on factual data, assurance of

execution and immediate confirmation of the contracts, control through real time processing

of information and electronic surveillance, and the use of computer hardware to implement

the process. It does not separate clearing and surveillance from the futures trading process

as do other exchanges because it is the combined process which allows the markets to

function properly.; Column 24, Lines 19-25, A method of transacting a sale of a particular

futures commodity in varying volumes or lot sizes by members of a futures trading exchange

as principals or agents for others wherein bids to purchase or offers to sell are made by said

principals or agents for said particular commodity, said method comprising the steps of:).

16. **As per Claim 7**, Wagner discloses the system of claim 6, wherein the plurality of financial

instruments includes an amount of a commodity underlying the at least one futures contract

(Column 20, Lines 57-68 and Column 21, Line 1,These terminals can communicate with the

central processor of the exchange system which validates the terminal input, cues the

orders being received by time, size and commodity, executes matching bids and offers and

clears trades simultaneously, reports the last sale by time, quantity and price according to

commodity, reports bids/offers as they are received, notifies traders of filled or unfilled

orders, reports various market conditions and transaction to the remote terminals for use by

the traders, maintains a detailed trade history of each member of the exchange and

provides the necessary trade data for settlement and compliance.; Column 3, Lines 49-52,

the breadth of the market will also be indicated. That is, whether a bid of 200 contracts

represents on offer to buy 200 contracts or 20 offers to buy 10 contracts).

17. **As per Claim 8**, Wagner discloses the system of claim 1, wherein the processor is adapted

to periodically monitor the memory to determine if the at least one complex order can be

matched (Column 11, Lines 7-21, Again, if comparator 144 finds that a match occurs with a

particular order and an execution can occur, a signal is produced on connection 153 which

is coupled to comparator 155 which determines whether or not there is a new high or new

low price. If a new high or a new low price is determined, that information is coupled

through connection 157 to the memory 159 where the commodity file and the day file is

updated with the new high or the new low price for that day and for that commodity. That

information is also coupled through connection 163 to memory 165 to update the central

processor price field and quantity file. In addition, of course, the confirmation of the order

and the execution and the display thereof is taking place as shown in FIG. 5.; Column 13,

Lines 39-47, The conditional order circuit 236 in FIG. 7 is disclosed in detail in FIG. 9. If the

signal produced by decision unit 230 on line 232 in FIG. 7 is a conditional order it will be

coupled on line 232 to the conditional order circuit shown in FIG. 9. The conditional orders

are either "fill or kill" or "limit up," "limit down," "time order," "at market" , "stops," and

"spreads/straddles." Other types could be established if needed or desired. If the

conditional order is a "fill or kill" order it is coupled to open order memory queue 316 where it

is stored and an output produced on line 318 to circuit 320 which determines whether or not

the "fill or kill" conditions can be satisfied. If the order can be filled, circuit 320 produces an

output on line 322 which is coupled to match circuit 248 in FIG. 8 and the signal processed

as described previously. Column 8, Lines 1-3, Also it does trade matching by surveying all

bids and all offers and finding a match, if one exists, between the bids and offers.).

18. **As per Claim 10**, Wagner discloses the system of claim 1, wherein the processor is adapted

to monitor the memory to determine if the at least one complex order can be matched on the

occurrence of a market event (Column 11, Lines 7-21, Again, if comparator 144 finds that a

match occurs with a particular order and an execution can occur, a signal is produced on

connection 153 which is coupled to comparator 155 which determines whether or not there

is a new high or new low price. If a new high or a new low price is determined, that

information is coupled through connection 157 to the memory 159 where the commodity file

and the day file is updated with the new high or the new low price for that day and for that

commodity. That information is also coupled through connection 163 to memory 165 to

update the central processor price field and quantity file. In addition, of course, the

confirmation of the order and the execution and the display thereof is taking place as shown

in FIG. 5.; Column 8, Lines 1-3, Also it does trade matching by surveying all bids and all

offers and finding a match, if one exists, between the bids and offers.).

19. **As per Claim 11,** Wagner discloses the system of claim 1 0, wherein the market event

includes a change in best price information (Column 2, Lines 15-25, The opportunity for

mistake or abuse has been acknowledged by regulators and exchanges alike. As the

system presently exists, trades are not confirmed until after an exchange is closed for the

day. Therefore, if a floor trader has traded in front of a customer in order to obtain a better

price or has failed to execute a trade for fraudulent reasons, it is difficult to detect. Even

when a trade has been properly executed the opportunity for abuse or mistakes is still high

as will be discussed hereinafter.; Column 19, Lines 43-51, This system enables the trader to

carry a portable terminal to some location apart from his remote terminal and allows him to

communicate with the trading system over the phone lines to determine the highest bid

made, the lowest offer made and the last trade price of a particular commodity. The

information received from the trading system is displayed so that he can make the proper

decision. He can then make an offer or bid at a price he selects or at the market price.;

Column 6, Lines 13-18, FIG. 6 is a diagrammatic representation of the memory storage

circuits of the host or central computer in the trading system for storing the bids or offers by

time, price and quantity and for updating the price field in the memory when a new high or

new low price is submitted; Column 11, Lines 7-21, Again, if comparator 144 finds that a
match occurs with a particular order and an execution can occur, a signal is produced on
connection 153 which is coupled to comparator 155 which determines whether or not there
is a new high or new low price. If a new high or a new low price is determined, that
information is coupled through connection 157 to the memory 159 where the commodity file
and the day file is updated with the new high or the new low price for that day and for that
commodity. That information is also coupled through connection 163 to memory 165 to
update the central processor price field and quantity file. In addition, of course, the
confirmation of the order and the execution and the display thereof is taking place as shown
in FIG. 5.).

20. **As per Claim 12**, Wagner discloses the system of claim 10, wherein the market event
includes the storage of a new order or quotation in the memory (Column 3, Lines 43-47, The
exchange central computer will retain all orders received, arranging each bid and offer on
the basis of its price, quantity and entry time and displaying all bids in descending order of
price and all offers in ascending order of price.; Column 6, Lines 13-18, FIG. 6 is a
diagrammatic representation of the memory storage circuits of the host or central computer
in the trading system for storing the bids or offers by time, price and quantity and for
updating the price field in the memory when a new high or new low price is submitted;
Column 11, Lines 7-21, Again, if comparator 144 finds that a match occurs with a particular
order and an execution can occur, a signal is produced on connection 153 which is coupled
to comparator 155 which determines whether or not there is a new high or new low price. If
a new high or a new low price is determined, that information is coupled through connection
157 to the memory 159 where the commodity file and the day file is updated with the new
high or the new low price for that day and for that commodity. That information is also

coupled through connection 163 to memory 165 to update the central processor price field and quantity file. In addition, of course, the confirmation of the order and the execution and the display thereof is taking place as shown in FIG. 5.; Column 12, Lines 8-15, If identifier unit 194 determines that the incoming signals constitute a new order, it produces an output on connection 210 to the order process circuitry 212 in the central processor unit for processing. The output of circuitry 212 on line 214 is coupled to a time stamp unit 216 and sent through connection 218 to the memory history file 220. Thus, a file history of all orders is kept in memory 220.).

21. **As per Claim 17**, Wagner discloses the system of claim 1, wherein the at least one complex order stored earliest in time is ranked with a higher priority for execution than complex orders stored later in time (Column 24, Lines 32-35, comparing said received bids and offers and matching equal bids and offers on a first come, first served basis according to the time of receiving said bids and offers thereby storing a trading system; Column 3, Lines 43-47, The exchange central computer will retain all orders received, arranging each bid and offer on the basis of its price, quantity and entry time and displaying all bids in descending order of price and all offers in ascending order of price.).

22. **As per Claim 18**, Wagner discloses the system according to claim 1, further comprising an execution processor coupled with the processor and adapted to execute the at least one complex order with the determined inverse complex order (Column 12, Lines 16-19, As the order is time stamped and filed in the history file of the memory 220; Column 12, Lines 8-15, If identifier unit 194 determines that the incoming signals constitute a new order, it produces an output on connection 210 to the order process circuitry 212 in the central processor unit for processing. The output of circuitry 212 on line 214 is coupled to a time stamp unit 216 and sent through connection 218 to the memory history file 220. Thus, a file history of all

orders is kept in memory 220.; Column 1, Lines 5-13, The present invention relates to a

futures trading exchange and in particular to an automated open outcry futures trading

exchange having a central processor associated with one or more remote terminals through

which trades can be made by members of the exchange who enter offers or bids at the

remote terminal and couple them to a central processor which compares any bid with offers

on a priority basis, finds a match and completes the execution of the transaction.; Column 3,

Lines 53-58, In addition, the video monitor of each remote terminal will display lot sizes, last

sale prices, daily price ranges, the volume for each contract month, the spread relationships

or price differential among the various contract months, and allows simultaneous spread

trades (both in time and by commodity) to take place.); Column 7, Lines 3-8, Thus, if remote

terminal 18 is a "smart" terminal, it may include a microprocessor 22 which would include a

keyboard and a display for text editing which is associated with a memory or storage unit 24

through connection 26, a printer 28 through connection 30 and an output on connection 34

to modem 32.).

23. **As per Claim 20**, Wagner does discloses the system of claim 1, wherein a number of option

contracts for at least one leg of the at least one complex order is a ratio of a number of

option contracts for at least one other leg of the at least one complex order (Column 4, Lines

10-13, The exchange central computer will be able to handle a full array of futures orders

including straddles, limit orders and stop orders). Examiner notes that the ratio of legs in a

straddle is 1:1 (one short call, one short put).

24. **As per Claim 21**, Wagner discloses the system of claim 20, wherein the matching algorithm

is adapted to match a portion of each leg of the at least one complex order based on the

ratio (Column 4, Lines 10-13, The exchange central computer will be able to handle a full

array of futures orders including straddles, limit orders and stop orders; Column 15, Lines

48-55,The output of the time stamp unit at step 450 is also coupled on line 456 to decision

unit which determines whether or not the total quantity of the order can be satisfied as at

step 458. If only part of the order can be satisfied and there is a partial match, that portion

which is not matched is coupled through path 460 back to the order queue where it is

reprocessed as in step 446 until a match can occur.; Column 3, Lines 53-58, In addition, the

video monitor of each remote terminal will display lot sizes, last sale prices, daily price

ranges, the volume for each contract month, the spread relationships or price differential

among the various contract months, and allows simultaneous spread trades (both in time

and by commodity) to take place).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

26. **Claims 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Wagner in view of U.S. Patent Application Publication 2003/0004899A1 to Bergenudd

(hereinafter Bergenudd).

27. **As per Claim 23**, Wagner does not expressly disclose the system according to claim 9,

wherein the net price of the plurality of complex order is determined from a current market

price for each leg of the at least one complex order.

However, Bergenudd teaches determining a net price of a complex order is from a

current market price for each leg of the complex order (see Figure 2; ¶3, An order involving a

number of different simultaneous trades of contracts is usually referred to as a combination order or a combination contract order. For example, a person may wish to buy 7 contracts A and sell 6 contracts B and not pay more than $100 for the whole combination contract. The amount that the person pays or receives when a combination order is traded is referred to the net price of the combination order.; (¶4, Furthermore, when a combination contract (or a number of them) are to be executed at a given net price, it is often necessary to determine the price for each product/sub-contract of the combination order. The price for each sub-contract, sometimes referred to as a leg. must be set so that when executing all the legs of a combination contract, the total price of all legs will equal the net price of the combination.; ¶13, It is another object of the present invention to provide a computerized trading system for trading combination orders that uses less processor power for calculating and determining the prices for the individual legs of a combination order by always providing a solution with a correct net price.).

     Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Wagner with the teachings of Bergenud so that a net price of the at least one complex order is determined from a current market price for each leg of the at least one complex order.

     A person having ordinary skill in the art at the time the invention was made would have been motivated to do so in order to insure the ability to match the order as taught by Bergenudd ((¶4, Furthermore, when a combination contract (or a number of them) are to be executed at a given net price, it is often necessary to determine the price for each product/sub-contract of the combination order. The price for each sub-contract, sometimes referred to as a leg, must be set so that when executing all the legs of a combination contract, the total price of all legs will equal the net price of the combination.; ¶20, Thus, given a combination contract, a tick size, and a

valid price interval for the product of each leg, there will be a valid price interval for the net price.
If the net price is outside that interval, it is always impossible to find a valid solution. Such an
order will not be matched in the system.).

28. **As per Claim 25,** Wagner discloses a system for matching complex orders to purchase or
sell a plurality of financial instruments (Column 1, Lines 5-13, The present invention relates
to a futures trading exchange and in particular to an automated open outcry futures trading
exchange having a central processor associated with one or more remote terminals through
which trades can be made by members of the exchange who enter offers or bids at the
remote terminal and couple them to a central processor which compares any bid with offers
on a priority basis, finds a match and completes the execution of the transaction.; Column 4,
Lines 10-13, The exchange central computer will be able to handle a full array of futures
orders including straddles, limit orders and stop orders), the system comprising:

a memory adapted to store a plurality of orders or quotations including one or more
complex orders, a plurality of inverse complex orders and a plurality of regular orders (Column
7, Lines 3-8, Thus, if remote terminal 18 is a "smart" terminal, it may include a microprocessor
22 which would include a keyboard and a display for text editing which is associated with a
memory or storage unit 24 through connection 26, a printer 28 through connection 30 and an
output on connection 34 to modem 32.; Column 3, Lines 43-47, The exchange central computer
will retain all orders received, arranging each bid and offer on the basis of its price, quantity and
entry time and displaying all bids in descending order of price and all offers in ascending order
of price.; Column 6, Lines 13-18, FIG. 6 is a diagrammatic representation of the memory
storage circuits of the host or central computer in the trading system for storing the bids or offers
by time, price and quantity), wherein the complex and inverse complex orders each include a
net price;

a processor coupled with the memory to identify matches between at least one complex order and the plurality of inverse complex orders and regular orders (Column 7, Lines 3-8, Thus, if remote terminal 18 is a "smart" terminal, it may include a microprocessor 22 which would include a keyboard and a display for text editing which is associated with a memory or storage unit 24 through connection 26, a printer 28 through connection 30 and an output on connection 34 to modem 32.: Column 1, Lines 5-13, The present invention relates to a futures trading exchange and in particular to an automated open outcry futures trading exchange having a central processor associated with one or more remote terminals through which trades can be made by members of the exchange who enter offers or bids at the remote terminal and couple them to a central processor which compares any bid with offers on a priority basis, finds a match and completes the execution of the transaction.); and

wherein the matching algorithm includes:

a synthetic pricing routine that calculates a synthetic high price and a synthetic low price for the at least one complex order (see Figure 1 and related, Figure 6 and related text; see Figure 9 and related text)

an inverting routine that sorts the inverse complex order, determines an inverse complex order with the lowest inverted net price that is less than or equal to the synthetic high price and greater than or equal to the synthetic low price, and matches the at least one complex order with the determined inversed complex order if such an inverse complex order is found (see Figure 1 and related, Figure 6 and related text; see Figure 19 and related text; Column 1, Lines 5-13, The present invention relates to a futures trading exchange and in particular to an automated open outcry futures trading exchange having a central processor associated with one or more remote terminals through which trades can be made by members of the exchange who enter offers or bids at the remote terminal and couple them to a central processor which

compares any bid with offers on a priority basis, finds a match and completes the execution of

the transaction.; Column 3, Lines 53-58, In addition, the video monitor of each remote terminal

will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the

spread relationships or price differential among the various contract months, and allows

simultaneous spread trades (both in time and by commodity) to take place.)).

       Wagner does not expressly disclose a matching algorithm coupled with the processor,

wherein the processor uses the matching algorithm to match each leg of the at least one

complex order with the plurality of regular orders in a single transaction at a single net price.

       However, Bergenudd teaches a complex order with a net price wherein the matching

algorithm matches the complex order based on the net price (see Figure 2; ¶3, An order

involving a number of different simultaneous trades of contracts is usually referred to as a

combination order or a combination contract order. For example, a person may wish to buy 7

contracts A and sell 6 contracts B and not pay more than $100 for the whole combination

contract. The amount that the person pays or receives when a combination order is traded is

referred to the net price of the combination order.; (¶4, Furthermore, when a combination

contract (or a number of them) are to be executed at a given net price, it is often necessary to

determine the price for each product/sub-contract of the combination order. The price for each

sub-contract, sometimes referred to as a leg. must be set so that when executing all the legs of

a combination contract, the total price of all legs will equal the net price of the combination.; ¶13,

It is another object of the present invention to provide a computerized trading system for trading

combination orders that uses less processor power for calculating and determining the prices for

the individual legs of a combination order by always providing a solution with a correct net

price.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Wagner with the teachings of Bergenudd to match each leg of the at least one complex order with the plurality of regular orders and quotations in a single transaction at a single net price.

A person having ordinary skill in the art at the time the invention was made would have been motivated to do so in order to matching of all the legs of a complex order as taught by Bergenudd (¶4, Furthermore, when a combination contract (or a number of them) are to be executed at a given net price, it is often necessary to determine the price for each product/sub-contract of the combination order. The price for each sub-contract, sometimes referred to as a leg, must be set so that when executing all the legs of a combination contract, the total price of all legs will equal the net price of the combination.; ¶20, Thus, given a combination contract, a tick size, and a valid price interval for the product of each leg, there will be a valid price interval for the net price. If the net price is outside that interval, it is always impossible to find a valid solution. Such an order will not be matched in the system.).

29. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 6,064,985 to Anderson (hereinafter Anderson).**

30. **As per Claim 5,** Wagner does not expressly disclose the system of claim 4, wherein the plurality of financial instruments includes at least one order to purchase or sell stock underlying the at least one options contract .

However, Anderson teaches an automated portfolio management system that includes the selling of covered calls (Column 2, Lines 48-51, In both aspects of the system or method of the invention, stocks which are purchased for the investment portfolio have covered calls written against them for which a premium is received.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Wagner with the teachings of Anderson to include at least one order to purchase or sell stock underlying the at least one options contract .

A person having ordinary skill in the art at the time the invention was made would have been motivated to do so in order to provide a trader with additional functionality of being able to protect the investor from the payoff on a short call that becomes necessary if there is a sharp rise in the stock price underlying the call option.

31. **Claim 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner.**

32. **As per Claim 9,** Wagner discloses system of claim 1, further comprising a data interface coupled with the processor, wherein the data interface receives best price information (Column 11, Lines 7-21, Again, if comparator 144 finds that a match occurs with a particular order and an execution can occur, a signal is produced on connection 153 which is coupled to comparator 155 which determines whether or not there is a new high or new low price. If a new high or a new low price is determined, that information is coupled through connection 157 to the memory 159 where the commodity file and the day file is updated with the new high or the new low price for that day and for that commodity. That information is also coupled through connection 163 to memory 165 to update the central processor price field and quantity file. In addition, of course, the confirmation of the order and the execution and the display thereof is taking place as shown in FIG. 5.; Column 19, Lines 43-50,This system enables the trader to carry a portable terminal to some location apart from his remote terminal and allows him to communicate with the trading system over the phone lines to determine the highest bid made, the lowest offer made and the last trade price of a

particular commodity. The exchange central computer will automatically match equal bids

and offers on a first come, first served basis thereby executing the transaction.).

Wagner does not expressly disclose that the matching algorithm calculates the synthetic

high price and synthetic low price using the best price information.

However, Wagner does teach retrieving the best price and executing each leg of a

complex order (Column 19, Lines 43-50,This system enables the trader to carry a portable

terminal to some location apart from his remote terminal and allows him to communicate with

the trading system over the phone lines to determine the highest bid made, the lowest offer

made and the last trade price of a particular commodity. The exchange central computer will

automatically match equal bids and offers on a first come, first served basis thereby executing

the transaction.; Column 3, Lines 53-58, In addition, the video monitor of each remote terminal

will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the

spread relationships or price differential among the various contract months, and allows

simultaneous spread trades (both in time and by commodity) to take place.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to modify the invention of Wagner so that the matching algorithm

calculates the synthetic high price and synthetic low price using the best price information.

A person having ordinary skill in the art at the time the invention was made would have

been motivated to do so in order to as a matter of obvious design choice in providing the

opportunity for price improvement for the complex order overall.

33. **As per Claim 22**, Wagner does not expressly disclose the system according to claim 14,

further comprising an obvious price error algorithm coupled with the processor, the obvious

price error algorithm preventing matching algorithm from matching the complex order

against the determined inverse complex order if a price improvement by the determined

inverse complex order is greater than an error prevention value.

However, Wagner does teach checking for price errors (Column 2, Lines 26-41, On a

traditional exchange, after a trade is made a card is handed to an exchange employee who then

keypunches the data into the computer. At the same time trading cards must be manually

sorted to match trades. At the end of the day the computer lists are checked against the trading

cards to reach agreement as to the trades which have been made. As can be well understood,

there, first, may have been a mistake in the keypunching process. Secondly, there may be a

difference given in the two cards as to the price at which a trade was made and thirdly because

the trades are based on eye contact, there may be a difference in opinion as to whether a trade

was actually made at all. When there is disagreement, a list of "out trades" is made and

agreement must be reached as to whether the trade was made at all and if so at what price).

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to modify the invention of Wagner to include an obvious price error

algorithm coupled with the processor, the obvious price error algorithm preventing matching

algorithm from matching the complex order against the determined inverse complex order if a

price improvement by the determined inverse complex order is greater than an error prevention

value in order to reduce the opportunities for mistake or abuse of the trading system.

34. **Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in**

   view of U.S. Patent No. US 5,905,974 A to Fraser et al. (hereinafter Fraser).

35. **As per Claim 13**, Wagner does not expressly disclose the system of claim 1, further

   comprising an arrival delay timer, the arrival delay timer delaying execution of the matching

   algorithm for a period time from when the at least one complex order is stored by the

   memory.

However, Fraser teaches a trading system with an arrival delay timer that delays the execution of orders (Column 10, Lines 62-67, The When State is triggered by a trading command against an uncleared Bid/Offer by an Aggressor who is not one of the original makers. However, the system controls will not allow this trading command by the new Aggressor to be instantaneously executed. In accordance with system logic, the trading processor creates a time interval or delay, and thereby provides the original Maker(s) time to assess the new situation created by the Aggressor by permitting response to the uncleared entry on the passive side.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Wagner with the teachings of Fraser to include an arrival delay timer, the arrival delay timer delaying execution of the matching algorithm for a period time from when the at least one complex order is stored by the memory.

A person having ordinary skill in the art at the time the invention was made would have been motivated to do so in order to provides the original trader with the stored order time to assess the new situation created by the new trader by permitting response to the uncleared entry on the passive side as taught by Fraser (Column 10, Lines 62-67, The When State is triggered by a trading command against an uncleared Bid/Offer by an Aggressor who is not one of the original makers. However, the system controls will not allow this trading command by the new Aggressor to be instantaneously executed. In accordance with system logic, the trading processor creates a time interval or delay, and thereby provides the original Maker(s) time to assess the new situation created by the Aggressor by permitting response to the uncleared entry on the passive side.)

36. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of U.S. Patent No. 5,101,353 to Lupien et al. (hereinafter Lupien).**

37. **As per Claim 19**, Wagner does not expressly disclose the system of claim 9, wherein the

best price information reflects prices for an options contract on at least one away market.

However, Lupien teaches providing external price quotations from a plurality of external

markets to a market system (Column 15, Line 50-54, first storage means for collecting and

storing securities transaction data and price quotation data both from a plurality of securities

markets external to the system and from buy and sell orders and transactions generated internal

to the system).

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to modify the invention of Wagner with the teachings of Lupien so

that the best price information reflects prices for an options contract on at least one away

market.

A person having ordinary skill in the art at the time the invention was made would have

been motivated to do so in order to provide an investor with a comparator for the prices of the

inside market.

38. **Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in**

view of Bergenudd and in further view of Minton.

39. **As per Claim 24**, Wagner discloses a system for matching complex orders to purchase or

sell a plurality of financial instruments (Column 1, Lines 5-13, The present invention relates

to a futures trading exchange and in particular to an automated open outcry futures trading

exchange having a central processor associated with one or more remote terminals through

which trades can be made by members of the exchange who enter offers or bids at the

remote terminal and couple them to a central processor which compares any bid with offers

on a priority basis, finds a match and completes the execution of the transaction.; Column 4,

Lines 10-13, The exchange central computer will be able to handle a full array of futures

orders including straddles, limit orders and stop orders), the system comprising:

a memory adapted to store a plurality of orders or quotations including at least one

complex a plurality of inverse complex orders, and a plurality of regular orders, wherein the

complex and inverse complex orders each include a net price (Column 7, Lines 3-8, Thus, if

remote terminal 18 is a "smart" terminal, it may include a microprocessor 22 which would

include a keyboard and a display for text editing which is associated with a memory or storage

unit 24 through connection 26, a printer 28 through connection 30 and an output on connection

34 to modem 32.; Column 3, Lines 43-47, The exchange central computer will retain all orders

received, arranging each bid and offer on the basis of its price, quantity and entry time and

displaying all bids in descending order of price and all offers in ascending order of price.;

Column 6, Lines 13-18, FIG. 6 is a diagrammatic representation of the memory storage circuits

of the host or central computer in the trading system for storing the bids or offers by time, price

and quantity),

a processor coupled with the memory to identify matches among complex orders and

inverse complex orders, and regular orders ((Column 7, Lines 3-8, Thus, if remote terminal 18 is

a "smart" terminal, it may include a microprocessor 22 which would include a keyboard and a

display for text editing which is associated with a memory or storage unit 24 through connection

26, a printer 28 through connection 30 and an output on connection 34 to modem 32.: Column

1, Lines 5-13, The present invention relates to a futures trading exchange and in particular to an

automated open outcry futures trading exchange having a central processor associated with

one or more remote terminals through which trades can be made by members of the exchange

who enter offers or bids at the remote terminal and couple them to a central processor which

compares any bid with offers on a priority basis, finds a match and completes the execution of

the transaction.); and

wherein the quantity of at least one leg of the complex order is a ratio of at least one

other leg of the complex order (Column 4, Lines 10-13, The exchange central computer will be

able to handle a full array of futures orders including straddles, limit orders and stop orders–

Examiner notes that the ratio of legs in a straddle is 1:1 (one short call, one short put), and

wherein the legs of the at least one complex order are matched and the legs are

executed consistent with the ratio (Column 4, Lines 10-13, The exchange central computer will

be able to handle a full array of futures orders including straddles, limit orders and stop orders;

Column 15, Lines 48-55,The output of the time stamp unit at step 450 is also coupled on line

456 to decision unit which determines whether or not the total quantity of the order can be

satisfied as at step 458. If only part of the order can be satisfied and there is a partial match,

that portion which is not matched is coupled through path 460 back to the order queue where it

is reprocessed as in step 446 until a match can occur.; Column 3, Lines 53-58, In addition, the

video monitor of each remote terminal will display lot sizes, last sale prices, daily price ranges,

the volume for each contract month, the spread relationships or price differential among the

various contract months, and allows simultaneous spread trades (both in time and by

commodity) to take place);

wherein the matching algorithm includes:

a synthetic pricing routine that calculates a synthetic high price and a synthetic low price

for the at least one complex order (see Figure 1 and related, Figure 6 and related text; see

Figure 9 and related text)

an inverting routine that sorts the inverse complex order, determines an inverse complex

order with the lowest inverted net price that is less than or equal to the synthetic high price and

greater than or equal to the synthetic low price, and matches the at least one complex order

with the determined inversed complex order if such an inverse complex order is found (see

Figure 1 and related, Figure 6 and related text; see Figure 19 and related text; Column 1, Lines

5-13, The present invention relates to a futures trading exchange and in particular to an

automated open outcry futures trading exchange having a central processor associated with

one or more remote terminals through which trades can be made by members of the exchange

who enter offers or bids at the remote terminal and couple them to a central processor which

compares any bid with offers on a priority basis, finds a match and completes the execution of

the transaction.; Column 3, Lines 53-58, In addition, the video monitor of each remote terminal

will display lot sizes, last sale prices, daily price ranges, the volume for each contract month, the

spread relationships or price differential among the various contract months, and allows

simultaneous spread trades (both in time and by commodity) to take place.)).

Wagner does not expressly discloses a matching algorithm coupled with the processor

and adapted to match each leg of the complex order with a plurality of regular orders and

quotations in a single transaction at a single net price.

Wagner does not expressly disclose a matching algorithm coupled with the processor

and adapted to match each leg of the at least one complex order with the plurality of regular

orders and quotations in a single transaction at a single net price.

However, Bergenudd teaches a complex order with a net price wherein the matching

algorithm matches the complex order based on the net price (see Figure 2; ¶3, An order

involving a number of different simultaneous trades of contracts is usually referred to as a

combination order or a combination contract order. For example, a person may wish to buy 7

contracts A and sell 6 contracts B and not pay more than $100 for the whole combination

contract. The amount that the person pays or receives when a combination order is traded is

referred to the net price of the combination order.; (¶4, Furthermore, when a combination

contract (or a number of them) are to be executed at a given net price, it is often necessary to

determine the price for each product/sub-contract of the combination order. The price for each

sub-contract, sometimes referred to as a leg. must be set so that when executing all the legs of

a combination contract, the total price of all legs will equal the net price of the combination.; ¶13,

It is another object of the present invention to provide a computerized trading system for trading

combination orders that uses less processor power for calculating and determining the prices for

the individual legs of a combination order by always providing a solution with a correct net

price.).

    Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to modify the invention of Wagner with the teachings of Bergenudd

to match each leg of the at least one complex order with the plurality of regular orders and

quotations in a single transaction at a single net price.

    A person having ordinary skill in the art at the time the invention was made would have

been motivated to do so in order to matching of all the legs of a complex order as taught by

Bergenudd (¶4, Furthermore, when a combination contract (or a number of them) are to be

executed at a given net price, it is often necessary to determine the price for each product/sub-

contract of the combination order. The price for each sub-contract, sometimes referred to as a

leg, must be set so that when executing all the legs of a combination contract, the total price of

all legs will equal the net price of the combination.; ¶20, Thus, given a combination contract, a

tick size, and a valid price interval for the product of each leg, there will be a valid price interval

for the net price. If the net price is outside that interval, it is always impossible to find a valid

solution. Such an order will not be matched in the system.).

Neither Wagner nor Bergenudd expressly disclose further wherein the regular orders are selected based on an allocation algorithm adapted to allocate preferentially first to any customer orders and next to professional orders and quotations with larger size.

However, Minton teaches and interactive securities trading system that permits both professionals and non-professionals orders (Column 2, Lines 60-64, It is therefore an object of the present invention to provide a data processing system, and a network of data processing systems for allowing individuals to buy and sell securities directly from other individuals, with only minimal oversight by a broker.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Wagner in view of Bergenudd with the teachings of Minton so that the at least one complex order includes orders associated with non-professionals and professionals, and wherein complex orders from non-professionals are ranked with a higher priority for execution than complex orders received from professionals.

A person having ordinary skill in the art at the time the invention was made would have been motivated to do so in order to provide non-professionals the ability to trade their own accounts and get better deals and make markets as taught by Minton (Column 2, Lines 46-57, Therefore, what is needed is a data processing system and a network of data processing systems whereby individuals can buy and sell directly from each other, with only minimal involvement by a broker. In such a communications network an individual would be in a similar position to that of a broker, i.e, an individual would have access to many other individuals wishing to buy and sell securities. In such a network, an individual would be able to select among many competing offers to buy and sell, and thus would be able to get a better deal than if they were going though a broker. Also, such a network would allow individuals to make markets in the securities they wish.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kellie Campbell whose telephone number is (571) 270- 5495. The examiner can normally be reached on Monday through Thursday, 6:30 am to 5 pm est. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Kalinowski can be reached on 571-272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/KELLIE CAMPBELL/

Examiner, Art Unit 3691